Design • Green Design

# It's Time to Bring Composting Toilets Home

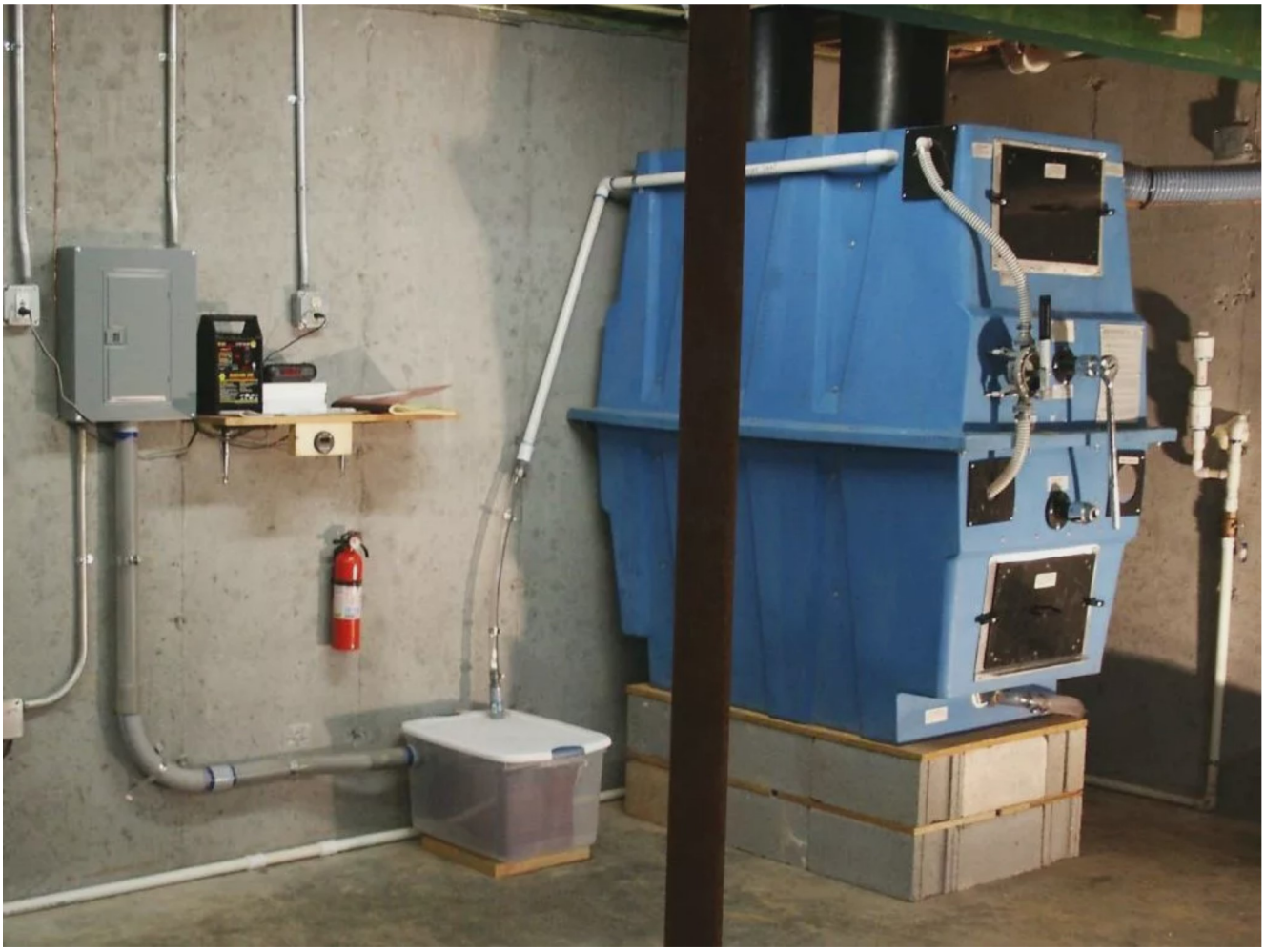
By Lloyd Alter Updated October 11, 2018

CC BY 2.0. Lloyd Alter/ Envirolet composting toilet

Lots of people are talking about going net zero when it comes to electricity and even going off-grid; not so many are considering going net-zero water and going off-pipe. When one considers the cost in dollars and energy required to clean water for drinking, only to flush it down the toilet, take it back and clean it again before dumping, you would think that municipalities would welcome composting toilets in homes. Where I live, in the Province of Ontario in Canada, they even changed the code in the last revision to specifically include them:

9.31.4.1. Required Fixtures (1) A dwelling unit with a water distribution system shall contain, (d) a water closet or **a drainless composting toilet.**

days, like the Envirolet remote system shown above, seen at the Cottage Life Show in Toronto. It's probably the system that's most like what people are used to with regular toilets; there is a special toilet that is connected to a vacuum pump that sucks everything away, mooshes and macerates it all and sends it to the composter.

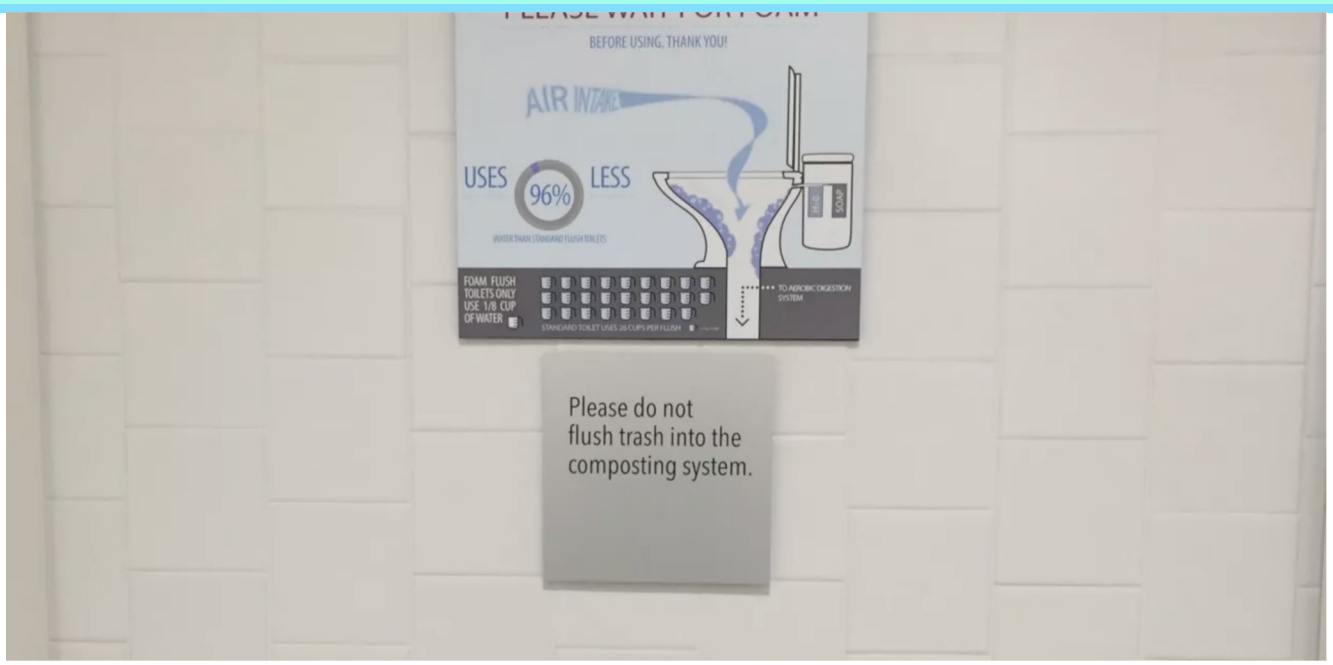


© *Allison Bailes' big Phoenix composting toilet in the basement*

A big benefit of this Envirolet system is that you don't need a basement; the poop gets pumped in any direction. But it is more complex than just relying on gravity. As engineer Allison Bailes noted in the discussion of his Phoenix system, big and in the basement is better. There is a greater separation between you and the poop, which makes it feel more like a normal toilet, and it requires a lot less maintenance.

*Lloyd Alter/ Sun Mar Centrex/CC BY 2.0*

If you have a basement, you can also use systems like this Sun-Mar Centrex, where the toilet is mounted above the tank. They also make a version with a water-flushing valve toilet; I had one and found that it made soggy compost and required a drain for the excess liquid. The only benefit is that it feels more "normal" but then you lose the great benefit of the air circulation through the toilet. Really, stick with the gravity version.

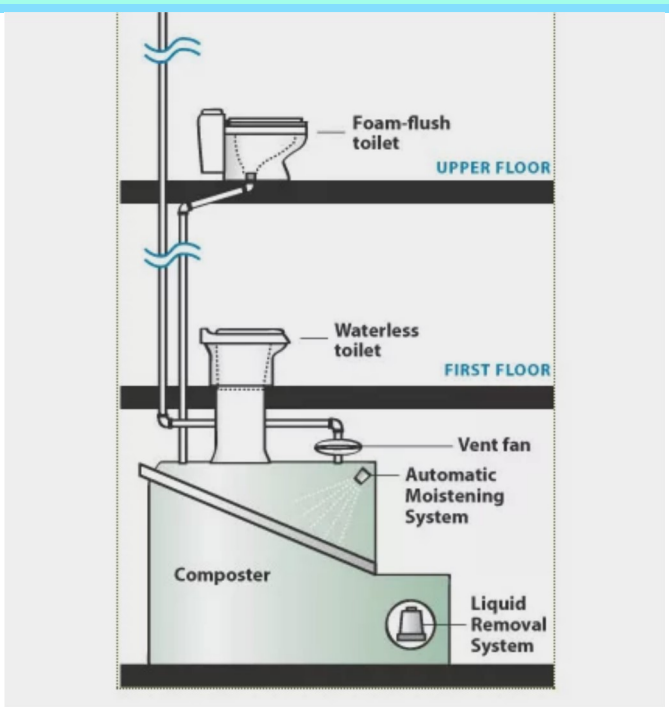



*Lloyd Alter/ foam flush/CC BY 2.0*

At the Bullitt Center in Seattle, they have five stories of separation between the toilets and the tanks and it works fine. Because air is constantly being sucked out through the toilet, it never smells in the bathroom, a great advantage. They have foam flush toilets, where a tiny bit of water and foam keeps everything moving along and the bowl clean but it is an open pipe right down to the basement.

*Lloyd Alter/ Phoenix composters at Bullitt Center/CC BY 2.0*

Here were their tanks in the basement.




*© Clivus Multrum*

There are other popular big systems, most notably the Clivus Multrum, which can be used both with a waterless gravity toilet or a fancy foam flusher. It, like most of the big units, needs to be emptied less than once a year; this means they can be set up with a service contract so that the homeowner can flush and forget, and have someone else come and deal with it.

Really, there would so many benefits for the cities and for the environment if more people went off pipe. No more combined sewers overflowing; no more giant expensive sewage treatment plants; lots of valuable compost that could be mined for its phosphorus and nitrogen. Cities should be promoting this, not fighting it.

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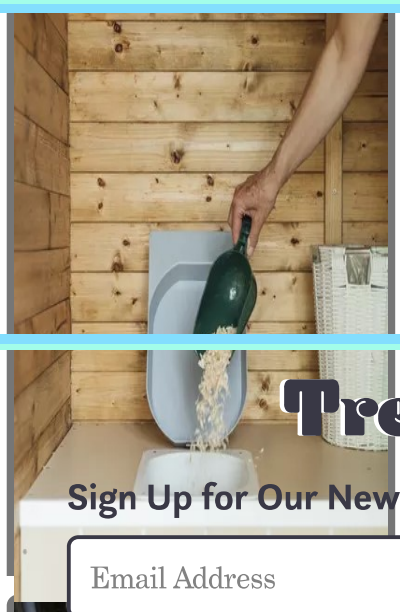

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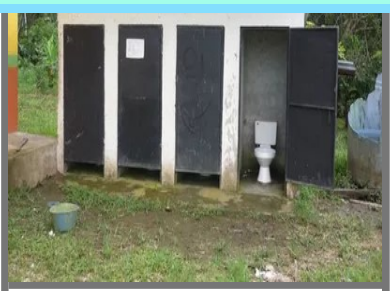

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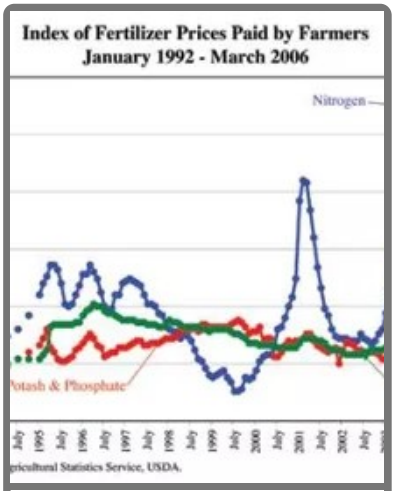
Index of Fertilizer Prices Paid by Farmers
January 1992 - March 2006
Nitrogen
Potash & Phosphate
Agricultural Statistics Service, USDA.

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